

REMARKS/ARGUMENTS

I. STATUS OF CLAIMS

Claims 28-51 are pending. Claims 1-27 have been cancelled without prejudice. It is respectfully submitted that all claims are fully supported by the specification as originally filed and that no new matter has been introduced. For example, independent claims 28, 36 and 44 are supported by at least paragraphs [0028]-[0037].

Claims 1-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohtsuka (US Patent 5,809,315) further in view of Shteyn et al. (US PGPub 2003/0040344). This rejection is respectfully traversed and reconsideration is respectfully requested.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohtsuka, further in view of Shteyn et al. Applicant has cancelled claims 1-27 without prejudice and added new claims 28-55 to more clearly define the present invention.

The Examiner contends that Ohtsuka discloses a method comprising setting an operating voltage (detection voltage, see column 5, line 56) supplied to a processor (voltage detection means 2, see Fig. 1) based on a mode of operation (operation mode, see column 5, line 53) of the processor (see column 5, lines 52-57). However, the Examiner indicates that Ohtsuka fails to disclose the processor being configured to process wireless communication signals. The Examiner contends that Shteyn teaches a processor (communicator 102, see Fig.1) configured to process wireless signals and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ohtsuka and Shteyn. It is respectfully submitted that the Examiner is misinterpreting Ohtsuka.

It is respectfully submitted that Ohtsuka discloses detecting a voltage level of a battery, V_{BAT} . The detection voltage referred to by the Examiner is a comparative voltage used to determine if the voltage level, V_{BAT} , has been restored (see col. 5, lines 53-60). In the arrangement of Ohtsuka relied on by the Examiner, two devices are provided. Device 17 is for performing a comparatively small load power consumption

operation while device 18 is for performing a comparatively high load power consumption operation (see col. 5, lines 21-24). When switch 19 is turned on, boosting means 3 starts operation to boost the voltage level to a stable voltage level above V_{BAT} . Operations are then performed by devices 17 and 18. (See col. 5, lines 33-43) Once the operations are completed, the detection voltage is used to determine if the voltage of the battery has been restored to V_{BAT} and not for any operations. Once it has been restored, the boosting means is made inoperative. (See col. 5, lines 57-64)

Additionally, the Examiner cites col. 6, lines 2-4 for reducing or increasing the operating voltage when in a sleep mode or when about to leave the sleep mode, respectively. It is respectfully submitted that col. 6, lines 2-4 disclose reducing the detection voltage, which as noted above is used to detect the voltage of the battery and is not an operating voltage for any device.

Thus, Ohtsuka discloses using a battery to guarantee power for a microcomputer (see col. 4, lines 19-22) and a boosting means to provide power, along with the battery, for carrying out operations by the devices, i.e., an electronic apparatus. The boosting means continues to operate after the operations are completed to ensure that the battery is recharged to an appropriate voltage level before the boosting means is rendered inoperative. Accordingly, Ohtsuka discloses an electronic apparatus that includes a microcomputer that is powered by a battery during an "off mode." A boosting means and the battery provide a single operating voltage to the devices when the electronic apparatus is in an "on mode" so that the devices operate. When the electronic apparatus returns to the "off mode" and the devices discontinue operation, the boosting means continues to operate until the battery is recharged.

In contrast thereto, and as clearly recited in the new claim 28, the present invention provides a method of providing an operating voltage to a processor configured to process wireless communication signals, and modifying the operating voltage provided to the processor based on a mode of operation of the processor. As noted above, in Ohtsuka a single operating voltage is provided to devices 17 and 18 by the boosting means and the battery for operation of the devices, and no disclosure or even suggestion is made to modify the operating voltage provided to the devices 17 and 18

based upon the mode of operation of the devices. The voltage is modified only after the battery is back at V_{BAT} , regardless of the operating mode of the devices 17 and 18.

It is respectfully submitted that Shteyn fails to make up for the lack of teaching in Ohtsuka.

Accordingly, it is respectfully submitted that claim 28 is allowable for at least the above reasons. Claims 29-35 depend, either directly or indirectly, on claim 28 and therefore, they are allowable for at least the reasons claim 28 is allowable.

Claim 36 is directed to an apparatus comprising a power management controller to provide an operating voltage to a processor configured to process wireless communication signals, and to modify the operating voltage based on a mode of operation of the processor. As discussed above, neither Ohtsuka nor Shteyn, either alone or in combination, disclose or suggest such an apparatus and therefore, claim 36 is allowable. Claims 37-43 depend on claim 36 and therefore, they are allowable for at least the reasons claim 36 is allowable.

Claim 44 is directed to an article of manufacture comprising a storage medium and a set of instructions stored in the storage medium, which when executed by a power management controller cause the power management controller to perform operations. The operations include providing an operating voltage to a processor configured to process wireless communication signals, and modifying the operating voltage provided to the processor based on a mode of operation of the processor. As discussed above, neither Ohtsuka nor Shteyn, either alone or in combination, disclose or suggest such an article of manufacture and therefore, claim 44 is allowable. Claims 45-51 depend on claim 44 and therefore, they are allowable for at least the reasons claim 44 is allowable.

Conclusion

Claims 28-51 are believed to be in condition for allowance. Thus, a Notice of Allowance is earnestly solicited. Please contact the undersigned at (503) 796-2997 regarding any questions or concerns associated with the present matter. If any fees are due in connection with this paper, the Commissioner is authorized to charge Deposit Account 500393.

Respectfully submitted,
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